

Initial	Date
2/1/10	4/6/2010
CMC	3/31/10

BA WTR
BA SD
Mail Stop 60189

APR 06 2010

Memorandum

To: Project Leader, Lake Andes National Wildlife Refuge
From: Chief, Division of Water Resources
Subject: 2009-2010 Water Use Report/Management Plan

The subject reports for Lake Andes National Wildlife Refuge and Varilek, Sherman, Broken Arrow, and Roth Wildlife Production Areas have been reviewed and approved.

We noted that the Owens Bay Well will need be replaced in the near future. Please contact Water Resources a few months prior because the proper permit will have to be obtained from the State before construction can begin.

Attached is the signed approval page for your files. Thank you for your effort and time in preparing the report, it is appreciated.

S/ MEGAN ESTEP

Attachment

bcc: WTR rf

WTR:CCordova:cc:03/31/2010
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LAKE ANDES NATIONAL WILDLIFE REFUGE COMPLEX

ANNUAL WATER USE REPORT AND MANAGEMENT PLAN

2009

Prepared by: Mike Bryant Date: 3/18/2010

Concurrence: Michael D. Bryant Date: 3/18/2010
Project Leader

Refuges Approval: J. Paul Coome Date: 3-25-10
Refuge Supervisor

Water Resources Review: [Signature] Date: 4/6/2010

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2009

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 220-3 (Owens Bay Well)

PRIORITY DATE: 7/6/1956

SOURCE: Dakota Sandstone artesian aquifer

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: well

AF STORAGE: n/a

RATE OF DIVERSION: (see below)

AF SEASONAL: n/a

WELLS: YES X NO

FREE FLOWING: 2.22 cfs

or PUMPED: n/a

GPM

TYPE OF USE:

Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use
versus the Water Rights data.*

DATE OF INSPECTION: 10/19/2009

INSPECTED BY: Edward Rodriguez

CONDITIONS AT INSPECTION: diminishing flow from well

AF STORAGE: n/a

OR

ESTIMATED ELEVATION: n/a

WELLS: FREE FLOWING: .61 cfs (273 gpm)

OR

PUMPED: n/a GPM

CONDITION OF FACILITIES: Diminished flow and a deteriorating well casing will require replacement of this well in the future.

OVERALL CLIMATIC CONDITIONS: near normal precipitation.

PROPOSED WATER PROGRAM: attempts to reduce flow at wellhead have caused leaking around well casing. Active management is limited.

COMMENTS: This is a free-flowing artesian well.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM - REPORT YEAR: 2009

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 517-3 (Lake Andes)

PRIORITY DATE: 4/22/1940

SOURCE: Andes Creek, Garden Valley Creek, other tributaries

WATER DIVERTED: YES NO X (no longer) IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: n/a

AF STORAGE: 13,721 af

RATE OF DIVERSION: n/a

AF SEASONAL: 6,813 af

WELLS: YES NO X FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: X Domestic:

Crop Irrigation: Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use
versus the Water Rights data.

DATE OF INSPECTION: 5/11/09

INSPECTED BY: Steve Spawn, Mike Bryant

CONDITIONS AT INSPECTION: exposed shoreline on Center and South units

AF STORAGE: <20,634 af OR ESTIMATED ELEVATION: 1433.15 amsl

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: Water control structures (WCS) were replaced during 2008. New box culverts were installed in the North and South dikes that are considerably deeper than the previous ones constructed in 1940. Plastic lumber stoplogs were used for the first time. Ice damaged the new WCS on the South dike in early 2009, requiring removal of the stoplogs at and above the waterline. Repair of the damaged structure is planned for 2010.

OVERALL CLIMACTIC CONDITIONS: Near normal precipitation. Lake elevation is average.

PROPOSED WATER PROGRAM: No active management planned.

COMMENTS: Elevation measured for South unit. Full pool equals 1437.25'. South unit was 3.9' below full pool. North unit elevation was 1436.6, which is at full pool.

Water Resources examined the potential of the Garden Creek diversion during 2007. The diversion was decommissioned ~50 years ago. Hydrologist Mark Rodney determined that if the diversion were recommissioned it had the potential to contribute ~168 af of water to Lake Andes in a normal year. This equates to .04' of elevation gain over the entire lake. The Charles Mix County Lake Restoration Organization, a local non-profit group, has taken on the challenge of improving water

quality in the Lake Andes watershed.

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2009

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5250-3 (Varilek WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on Varilek WPA and private land

WATER DIVERTED: YES ☐ NO ☒

IMPOUNDMENTS: YES ☒ NO

MEANS OF DIVERSION: n/a

AF STORAGE: 139 af

RATE OF DIVERSION: n/a

AF SEASONAL: n/a

WELLS: YES

NO X

FREE FLOWING: n/a

GPM or PUMPED: n/a

GPM

TYPE OF USE:

Fish & Wildlife: X

Domestic:

Crop Irrigation: ☐

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use
versus the Water Rights data.

DATE OF INSPECTION: ~7/2009

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: moderate water level

AF STORAGE: <139 af

OR

ESTIMATED ELEVATION: <1614' amsl

WELLS: FREE FLOWING: n/a GPM

OR

PUMPED: n/a GPM

CONDITION OF FACILITIES: n/a

OVERALL CLIMATIC CONDITIONS: near normal precipitation

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR:2009

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5251-3 (Sherman WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on Sherman WPA

WATER DIVERTED: YES ☐ NO ☒

IMPOUNDMENTS: YES ☒ NO

MEANS OF DIVERSION: n/a

AF STORAGE: 271 af

RATE OF DIVERSION: n/a

AF SEASONAL: n/a

WELLS: YES ☐ NO ☒ FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: ☒ Domestic:

Crop Irrigation: ☐ Stock:

Other:

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use
versus the Water Rights data.*

DATE OF INSPECTION: ~7/2009

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: moderate water level

AF STORAGE: <271 af

OR

ESTIMATED ELEVATION: <1591.7' amsl

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: n/a

OVERALL CLIMACTIC CONDITIONS: near normal precipitation

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2009

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5077-3 (Broken Arrow WPA)

PRIORITY DATE: 10/7/1985

SOURCE: Joubert Drain

WATER DIVERTED: YES ☒ NO ☐

IMPOUNDMENTS: YES ☒ NO ☐

MEANS OF DIVERSION: Dam #7 (DU Dam)

AF STORAGE: 131.2 af

RATE OF DIVERSION: unknown

AF SEASONAL: n/a

WELLS: YES ☐ NO ☒ FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: ☒ Domestic: ☐

Crop Irrigation: ☐ Stock: ☐

Other: recreation ☒

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: ~7/2009

INSPECTED BY: Steve Spawn, Mark Heisinger

CONDITIONS AT INSPECTION: high water levels

AF STORAGE: <131.2 af

OR

ESTIMATED ELEVATION: unknown

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: Water control structures in good condition.

OVERALL CLIMACTIC CONDITIONS: Near normal precipitation. The pond behind Dam #7 was full for much of the year, storing an amount of water near the limit of our water right (<131.2 af).

PROPOSED WATER PROGRAM: Management will retain as much water as possible.

COMMENTS: Joubert Drain also known as New Holland Drain.

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2009

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 6013-3 (Roth WPA)

PRIORITY DATE: 7/30/1997

SOURCE: tributary of Dry Creek

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: ditch plug in tributary

AF STORAGE: 323 af

RATE OF DIVERSION: unknown

AF SEASONAL: 212 af

WELLS: YES NO X FREE FLOWING: n/a

GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: X Domestic: X

Crop Irrigation: Stock:

Other:

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use
versus the Water Rights data.*

DATE OF INSPECTION: ~7/2009

INSPECTED BY: Mark Heisinger

CONDITIONS AT INSPECTION: moderate water level

AF STORAGE: <323 af

OR

ESTIMATED ELEVATION: <1398.5' amsl

WELLS: FREE FLOWING: n/a GPM

OR

PUMPED: n/a GPM

CONDITION OF FACILITIES: good

OVERALL CLIMACTIC CONDITIONS: near normal precipitation

PROPOSED WATER PROGRAM: no active management planned

COMMENTS: